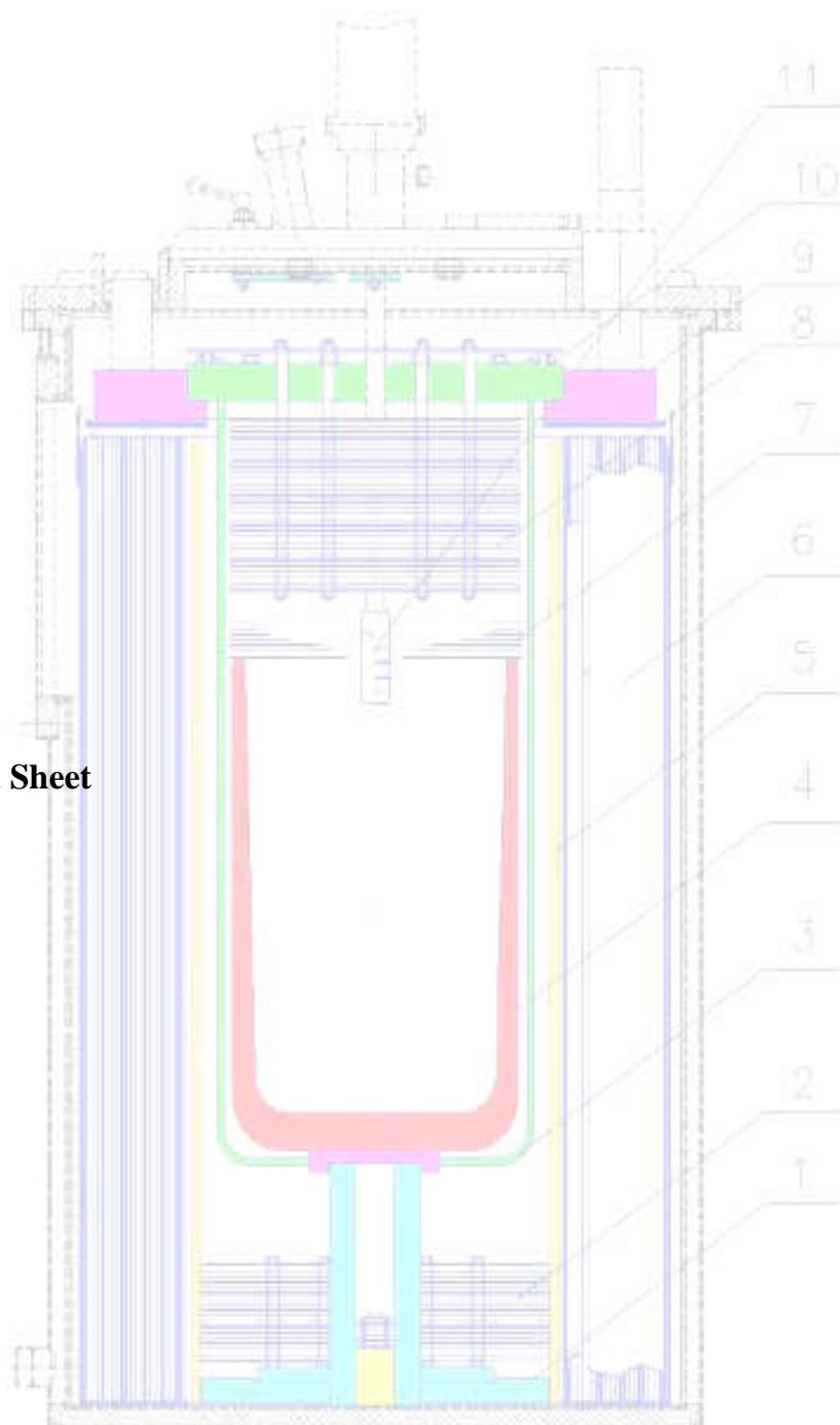


i50M

Technical Data Sheet



Vertical Melting Furnace system is an advanced process tool for the melting raw material corund. The system is optimized for controlled process development and user safety.

HIC i50M furnace system can be customized to melt max 50kg sapphire poly crystal bulks. The overall system is designed for ease of maintenance, repair and use in production and research mode. The cabinet contains the heating, power control, electrical, vacuum and gas handling systems.

HIC i50M is operated through our CVDWinPrC™ process control software that automatically logs data and graphically shows the time dependent values of user selected parameters. CVDWinPrC™ also allows users to load preprogrammed recipes, modify, check /create new recipes and view real time or saved execution data.

HIC i50M is designed to meet today's more stringent safety standards. The system has application customized safety protocols imbedded into relay logic, PLC and CVDWinPrC™ software for maximum operator and equipment safety.

HIC i50M consists of two controlled furnace subsystems in a vertical configuration. These subsystems are called "Melting & Filling" Furnace. The Melting & Filling Furnaces are capable of operation from ambient to 2200°C and adjustable in 1°C increments.

HIC i50M Linear Drive subsystem move the Furnace Assembly through the process zones between a start position and stop position.

Standard Configuration:

- CVDWinPrC™ based process control software for Real Time Process Control, Data Logging Display, Recipe Generation and Editing
- 50kg maximum poly crystal melting
- Crystal Linear movement
- Filling & Melting:
 - 2 Resistance Furnace for Temperatures up to 2200°C
 - Temperature control loops are PID controlled and user changeable
- Vacuum System
- Linear Motion System
- Proprietary Real-Time Cascade Process Temperature Control
- Mass Flow Controlled UHP Gas Lines
- Comprehensive Software and Hardware Safety Interlocks
- Three (3) Year Warranty

Applications:

- Sapphire poly crystal, Ti Sapphire, YAG, Nd:YAG, Ytterbium YAG, Cerium YAG, and Ruby raw melt materials in different concentrations.

Facility Requirements

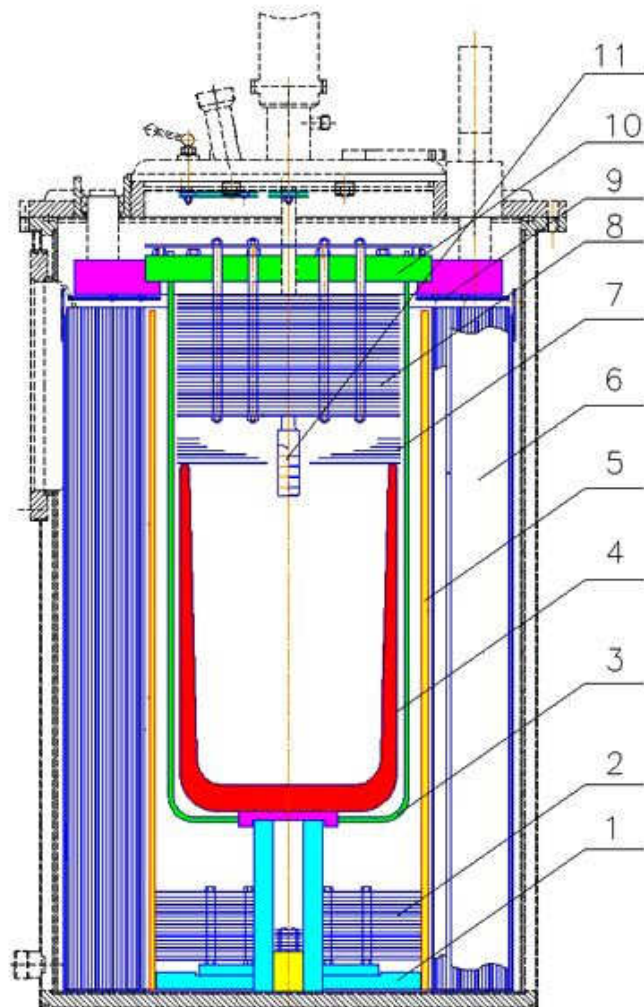
Electrical	400v	2 phase	50hz
Cooling Water	3600l/h		
Pneumatic Supply	Clean Dry Air/ Argon		
Process Gases	Argon		
Air-conditioned Room			
Facility Height	Min 4 meters		

Main Technical Characteristics

Max Working Temp	2200 °C
Working Pressure	5*10⁻²Pa
Power	28Kw(In the working Temperature)
Filling rate	5kg/h
Heater	Resistive; Tungsten & Carbon
Cooling	Water 3600l/h
Precision of Temperature Regulation	1 °C
Furnace Size	2050x950x850mm
Weight	960kg
Min Necessary Room	8m³
Vacuum system	Consists of a Fore Vacuum pump and a TurboMolecular Vacuum pump
Vacuum control	Assembled on the IONVAC v90 model
Vacuum Valves	4 atm air pneumatic pressure
Temperature Control	PID Regulation
Input program and Visualization	9"Touchscreen

Maintenance

- The maintenance of the Vacuum equipment must be undertaken as noted in the technical passports of the producer.
- After each process insides must be cleaned with a alcohol soaked mop.
- Before reloading the machine close the Heat & Melting furnace with silica gel mats.
- After every 3-4th process, the Heating & Melting unit must be visually checked in case of need change the carbon or tungsten sheets.



Technical support: For additional technical or other questions please contact Mr.:

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